CPSC 213 Labs Cheat-Manual

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Inspired by Jordon Johnson's "The Hitchhiker's Guide to CPSC213 Labs and Assignments "

Outline

- Assignments Brief.
- What about Labs.
- Get/Renew CS Account
- CS ugrad Linux Servers
- How to handin assignment
- D&D on assignment.
- Available Recourses
- Q&A

Assignment

- 9 Assignments in total through the semester. (a1 ~ a9)
- 3 Different programming languages used in assignments.
- Most assignments will be posted on the same day after the last one concludes, and you'll have **A WEEK** to complete.
- A8/A9 is expected to be **a lot** harder than other ones.

Assignment - Languages

- ~3 assignments with Java
  - Including the first 2, you'll write some simple logic methods for SM213 simulator.
  - You should be familiar with JAVA (from CPSC 210)
- About half of the assignments is in C.
  - You'll learn through out the course, mostly by your own with helps from TAs.
  - Focus on pointers and memory management in your leaning.
- There are some assignment using SM213 "Assembly" Language
  - Don't be afraid, It's a much simplified version of Assembly Language.
  - Comment EVERY line, Practice More, Easy Full points.

Labs

- **Mandatory** for Attendance(4.5% of the total Grades)!!!!
  - Be sure to **check-in** with your TA.
  - Labs are very helpful from the feedbacks of previous students.

- Activities
  - Introduce the starting point of Assignments.
  - Review/elaborate of class materials.
  - Answer questions from assignments and lectures.

Get your CS account

- https://www.cs.ubc.ca/getacct/
  - An automatically assigned username in the format "A1A1" or "A1A1A". E.g. r2c0d, r2d2
    - Login to lab computers in ICICS building.
    - Login to CS Linux remote servers(over SSH).
    - Need for Assignment hand-in.
  - Returning students need to **Re-activate it Every year**.

CS Department Linux Servers

- openSUSE Linux server
  - **lulu.ugrad.cs.ubc.ca**
  - **remote.ugrad.cs.ubc.ca**
  - More can be found on https://my.cs.ubc.ca/docs/connecting-department-unix-servers
- All servers shares the same storage spaces for your home(~) folder, including Lab computers in Windows.
- You need:
  - Some basic Linux knowledge.
  - A way(client) to access the server.

SSH and SCP

- **S**ecure **SH**ell allows you to remotely work on another machine
  - Using ssh logging into a remote computer is basically equivalent as if you are physically using the computer.
- **S**ecure **C**o**P**y allows you to copy files to or from remote machine, which also be called **SFTP**.
  - It functions as FTP with using ssh protocol instead of ftp.
- So, use SCP to transfer files and SSH to execute commands.

SSH and SCP - Clients

- **Windows**:
  - **SSH**:
    - **Putty/Kitty**: http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html
    - **Xshell**: Provided on Lab machines. https://www.netsarang.com/download/down_xsh5.html
  - **SCP**:
    - **WinSCP**: https://winscp.net/eng/download.php
    - **Xftp**: Provided on Lab machines. https://www.netsarang.com/download/down_xfp5.html

SSH and SCP - Clients

- **OSX/Linux**:
  - **SSH**: **Terminal**
    - **ssh** <username>@<server>
    - ssh r2d2@remote.ugrad.cs.ubc.ca
  - **SCP: Terminal**
    - **scp** <file to be copied> <location to copy it to>
    - scp foo.java r2d2@remote.ugrad.cs.ubc.ca:~/cs213/a1/
    - scp r2d2@remote.ugrad.cs.ubc.ca:~/cs213/a1/foo.java .

Unix/Linux Basics

Unix/Linux Basics - commands

- **ls**: lists the contents of the current directory
  - For a more detailed listing, use **ls –l**
- **cd**: takes you to the specified directory
  - Special directories:
    - **.** – the current directory (a.k.a. the working directory)
    - **..** – the parent of the current directory
    - **/** – the root directory (when used at the beginning)
    - **~** – your home directory
    - E.g.
      - cd /usr/local/bin
      - cd ~/cs213/a1
      - cd ../a2

Unix/Linux Basics - commands

- **pwd**: prints the path of current directory
- **cp**: copy files
  - Use option –r to copy folders with files and subfolders.
  - Syntax: cp [option] <original path> <destination path>
  - E.g.:
    - cp foo.java ~/cs213/a1/
    - cp *.java ~/cs213/a1
    - cp –r a1 ~/cs213/
    - cp foo.java bar.java

Unix/Linux Basics - commands

- **mv**: just like cp without preserving the original file.
- **rm**: delete files
  - E.g.
    - **rm foo.java**
    - **rm –r a1**
  - Use option –r to delete folders with files and subfolders.
  - **WARNING: never use absolute path(start with / or ~) with rm –r!**
- **mkdir**: creates a directory

UNIX Tutorial

Table of Contents

http://people.ischool.berkeley.edu/~kevin/unix-tutorial/toc.html

How to handin assignment?

- Login to any ugrad server with CS id over SSH
  - ssh r2d2@lulu.ugrad.cs.ubc.ca
- Create the directory ~/cs213/a1
  - mkdir ~/cs213
  - mkdir ~/cs213/a1
- Put all your files into the directory ~/cs213/a1
  - scp foo.java r2d2@lulu.ugrad.cs.ubc.ca:~/cs213/a1/

How to handin assignment?

- Run handin cs213 a1 at your home directory over SSH
  - cd ~
  - handin cs213 a1
- Use –o option to **Overwrite** previous handins
  - handin -o cs213 a1
- Use –c option to **Check** handin status.
  - handin -c cs213 a1
  - Make sure all your files are in that list and are not of size zero

Recommended IDEs/text editors

- For Java:
  - Eclipse (https://eclipse.org)
  - IntelliJ (https://www.jetbrains.com/idea/)
- For C and Assembly:
  - Sublime Text (https://www.sublimetext.com/)
  - Atom (https://atom.io/)
  - Any plain text editor that doesn't do weird formatting things

DOs and DON'T

- DO read the assignment instructions carefully
  - All instruction you need are likely contained or referenced in the assignments.
  - If you don't understand the instruction, TAs will glad to help, but be sure to read it first before asking.

- DO start the assignments as early as possible
  - Though a1 and a2 are on a slower pace, some assignments may take way more efforts than others such as a8 and a9.
  - Ask early, or you may jammed in the 100 posts on the day before the due-date.

DOs and DON'T

- DO work with a partner if possible
  - Assignments can be done solo, but two brains are (usually) better than one – It also makes grading easier (and faster)
- DO make sure you know how to handin
  - Questions about handin halfway through the course make your TAs cry :<
  - **Always check your handins!**

DOs and DON'T

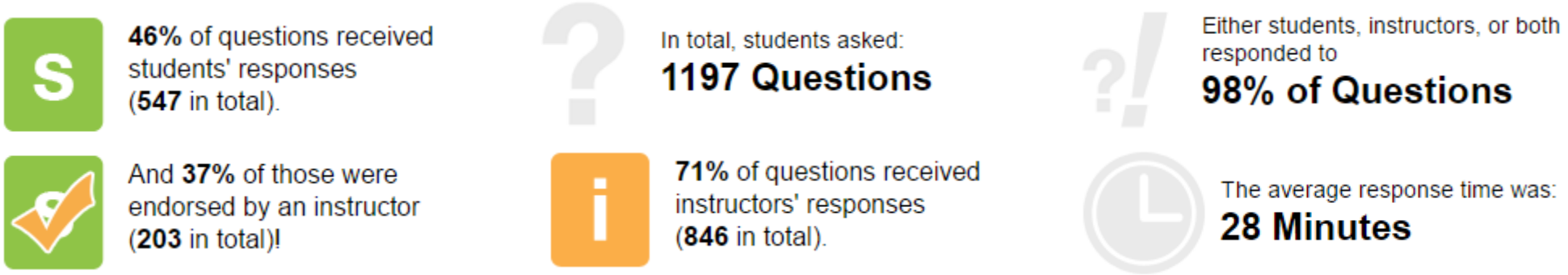
- DON'T be afraid to ask the TAs questions
  - The TAs are NOT EVIL
  - No questions means bored TAs (and too bad you actually have paid us anyway!)
- DON'T share code except with your partner
  - Academic integrity is important

Available Recourses

- **Google** is always a great start point.
- **Piazza** would be the second fast way for an answer.
  - And you can write **private** post to TAs and Instructors only.
- **Textbook** is really helpful for concepts elaboration.
- **Labs/Office Hours** are there for you to use! Talk with us in the right time, we are paid for helping and we are glad to help! ☺
- **Email** is definitely a choice of serious matters for private conversations.

Piazza - class/isz91ekraap2iw

- A great place to **ask** and to **share.**
  - Most questions are likely answered in 30~45min.
  - Always **search** before ask, it may take 5sec instead of 50mins.
    - On piazza, and **Google**
  - Be brave to ask and **answer** questions.
  - **Share** the articles, notes, ideas you find useful in learning.



TA Office Hours

https://my.cs.ubc.ca/students/ta-hours

Day	Time	Location	TA
Monday	10:00 - 11:00	DLC Table 4	Candice
	16:00 - 17:00	DLC Table 1	Candice
Tuesday	14:00 - 16:00	TBD	Justin
Wednesday	10:00 - 12:00	TBD	Li Ran
	13:00 - 14:00	ICCSX141	Qiu Shan
Thursday	12:30 - 13:45	ICCSX337	Phoenix
	14:00 - 16:00	TBD	Justin
Friday	09:00 - 11:00	DLC Table 3	Ksenia

Q & A

Thanks,
and welcome to CPSC 213

By Phoenix, Ksenia, Harin and all TAs!